BIHAREAN BIOLOGIST 18 (2): 155 – 159
Article No.: e242301

http://biozoojournals.ro/bihbiol/index.html

The first record of common reed bunting (*Emberiza schoeniclus*) in the northeastern Algerian Sahara

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Received: 11 March 2024 / Accepted: 04 June 2024 / Available online: December 2024 / Printed: December 2024

Abstract. The first record of common reed bunting *Emberiza schoeniclus* in the northeastern part of Algerian Sahara was during the wintering period in 2024 (January and February) at the Chott El Oued wetland in El Oued province. This significantly expands the recognized geographical area where the species can be found in Algeria. It addresses a distribution gap and highlights the importance of desert wetlands for bird species.

Keywords: *Emberiza schoeniclus*, expansion, wetland, Sahara, Algeria.

The climate profoundly influences life on Earth (Khezzani 2021). Wildlife is susceptible to climate change; their ranges move when the climate changes and species colonize new areas where the climate becomes more suitable (Cooperrider et al. 1996). Birds display considerable variety in their natural environment and are highly sensitive to changes in their surroundings (Thongsoulin et al. 2019). The migration and breeding phenology of the species are undergoing shifts in response to climate change (McDermott & DeGroote 2017). Migrant species, unlike animals that are limited to a local home range, are impacted by environmental conditions on a larger scale (Arizaga et al. 2006). The assessment of environmental changes in a specific area heavily relies on the arrangement and diversity of bird species (Padoa-Schioppa et al. 2006).

Algeria exhibits a wide range of climates, topography, soil types, and vegetation (Seltzer 1946, Benchetrit 1956, Quezel & Santa 1962, 1963). The diversity extends from the Mediterranean coast in the north to the Saharan region in the south. Furthermore, the country harbors a wide range of avian species, totaling 406, comprising 242 non-Passeriformes and 164 Passeriformes, of which the Emberizidae family alone accounts for 11 species. This underscores Algeria's prominent position in the Palearctic region's migration system and its role in the trans-Saharan migrations linking Eurasia and tropical Africa (Isenmann & Molai 2000).

In South Algeria, our knowledge of the biodiversity of avian species has significantly advanced in recent years, particularly in the northeastern Algerian Sahara (Farhi & Belhamra 2012, Guezoul et al. 2013, Chedad et al. 2023a). As Algeria is a vast country, particularly with its expansive Sahara region, adding new species to Algeria's bird list leads to expanding the range and breeding areas for certain species. There are currently new records

available for some species (Bederrar et al. 2023, Chedad et al. 2022b, 2023c, Bouzid et al. 2023b, c) and an expanding range of wintering or breeding sites (Bederrar et al. 2023, Bouzid et al. 2023a, 2023b, Chedad et al. 2022a, b, c, 2023c, d, Farhi et al. 2022).

Using a pair of 10x50 binoculars and a Nikon P1000 camera with an optical zoom of 125x, we conducted a direct observation on the morning of Saturday, January 27, 2024, while surveying birds. We observed three individuals of reed bunting feeding on reed seeds and insects found in the reed beds surrounding the peri-urban wetland known as Chott El Oued. The ornithological guide (Svensson 2010) facilitated their identification. We took some pictures, the best of which are reproduced here (Figure 1). During the winter period, we verify the species' presence on the site through additional visits conducted twice a month in February.

Figure 1. (A) Reed bunting on the reeds. (B) Reed bunting feed seeds reed. (C) general view of the site "Chott El Oued", Northeastern of Algerian Sahara.

This wetland is in the Souf region of the northeastern Algerian Sahara, in the capital of the province of El Oued (33°23'13.65"N, 6°51'40.28"E) (Figure 2). The region has a hyper-arid climate, defined by a hot and dry summer and a mild winter (Khezzani et al. 2022). They cover an area of 71 hectares, with 37% reed beds and 25% water. Open water is consistently

present due to rising groundwater and wastewater discharge. However, the water levels fluctuate, increasing in winter and decreasing in summer. This wetland offers a refuge for several migratory and resident birds (Marbled Duck, *Marmaronetta angustirostris*; Northern Shoveler, *Anas clypeata*; Black-winged Stilt, *Himantopus himantopus*; Eurasian Moorhen, *Gallinula chloropus)* (M. Gueddoul, pers. obs.).

The reed bunting is the only member of its genus suited to Mediterranean wetlands, with some subspecies facing severe endangerment (Alambiaga et al. 2023). It is a regular winter visitor to Algeria, located in the extreme south of its wintering range (Isenmann & Molai 2000). It has most recently been assessed for the IUCN Red List of Threatened Species and listed as Least Concern (BirdLife International 2019).

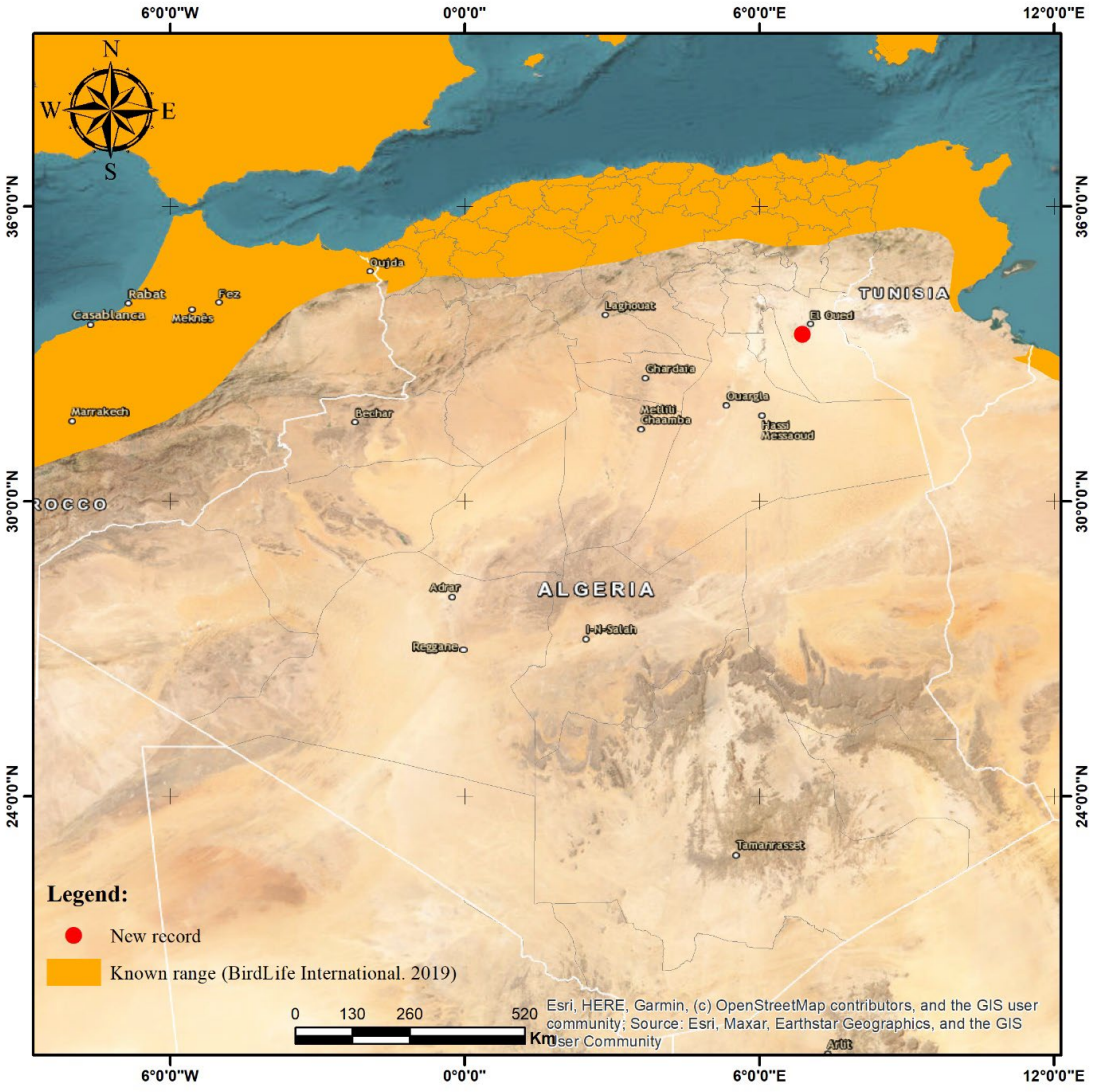

Figure 2. Map showing the geographical location of the new record in Northeastern Sahara and extant range of the reed bunting in Algeria.

This sighting in Algeria's northeastern Sahara represents a pioneering occurrence, notably extending the species' acknowledged habitat range across the country. Securing the availability of suitable habitat (wetlands, reed expansion) created a novel ecological niche that

facilitated the expansion of the reed bunting across its existing range. Moreover, previous research has explored the phenomenon of expansion in bunting species; a Little Bunting (*Emberiza pusilla*) was recently spotted in Touggourt, located in the Northern Sahara (Adamou 2021); the Rustic Bunting (*Emberiza rustica*) is mentioned for the first time in Algeria by Djemadi et al. (2018); and the House Bunting *Emberiza sahari* through research on (Moulaï 2019, El Bouhissi et al. 2021, Chedad et al. 2021a, b). Until the end of February, the species stayed in the northeastern Sahara, suggesting the possibility of irregular wintering. Furthermore, this enhances the inventory of avifauna documented in the Algerian desert, specifically focusing on members of the Emberizidae family. Without a doubt, despite the elevated temperatures, limited food resources, and irregular precipitation, the desert regions, with their oases and wetlands, serve as crucial rest stops for avian species and important sites for their wintering and breeding (Chedad et al. 2023a).

Acknowledgments

We would like to thank the General Directorate of Forests (Directorate of Forest Conservation of El Oued) and the members of the National Network of Algerian Ornithologist Watchers (R.N.O.O.A.).

References

Adamou, N. (2021): Première observation du Bruant Nain *Emberiza pusilla* en Algérie. Alauda 89(1): 75.

Alambiaga, I., González, R., Vera, P., Monrós, J.S., Palero, F. (2023): Genetic differentiation between two subspecies of *Emberiza schoeniclus* and open forest bunting's evolution inferred from mitogenomes. Journal of Avian Biology 2023(5–6): 1–9.

Arizaga, J., Campos, F., Alonso, D. (2006): Variations in wing morphology among subspecies might reflect different migration distances in Bluethroat. Ornis Fennica 83(4): 162–169.

Bederrar, F., Haddouchi, N., Arab-said, A., Laachichi, A., Belghit, A., Ketfi, A., Souahlia, M., Demmouche, M., Bougherab, L., Amzel, L., Chedad, A. (2023): Second observation of African crake *Crecopsis egregia* (Peters,W, 1854) (Gruiformes, Rallidae) in Algeria. Bulletin of the Iraq Natural History Museum 17(4): 541–548.

Benchetrit, M. (1956): Les sols d'Algérie. Revue de Géographie Alpine 44(4): 749–761.

BirdLife International. (2019): *Emberiza schoeniclus* (amended version of 2018 assessment). The IUCN Red List of Threatened Species 2019. IUCN Red List of Threatened Species. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T22721012A155430396

Bouzid, A., Chedad, A., Samraoui, F., Samraoui, B. (2023a): Range expansion of nesting Squacco Heron *Ardeola ralloides* and Black-Crowned Night Heron *Nycticorax nycticorax* in the Sahara. Wetlands Ecology and Management 31(4): 467–478.

Bouzid, A., Samraoui, F., Samraoui, B. (2023b): A survey of the distribution of the water rail *Rallus aquaticus* in Algeria and its first recorded breeding in the Algerian Sahara. African Journal of Ecology 61(2): 485–489.

Bouzid, A., Adamou, N., Chedad, A. (2023c): Première observation de l'érismature à tête blanche *Oxyura leucocéphala* dans le Sahara Algérien. Alauda 91(3): 210–213.

Chedad, A. (2021a). Bio-écologie des espèces aviennes dans quelques écosystèmes sahariens (Ghardaïa): Cas du Bruant du Sahara /Bio-ecology of avian species in some Saharan ecosystems (Ghardaïa): Case of the House Bunting [Doctorat thesis, Univ. Ouargla].

Chedad, A., Bendjoudi, D., Beladis, I., Guezoul, O., Chenchouni, H. (2021b): A comprehensive monograph on the ecology and distribution of the House bunting (*Emberiza sahari)* in Algeria. Frontiers of Biogeography 13(1): 1–19.

Chedad, A., Bouzid, A., Samraoui, B. (2022a): First successful nesting of the Little Egret *Egretta garzetta* in Ghardaïa (Algerian Sahara). Zoology and Ecology 32(1): 68–73.

Chedad, A., Bouzid, A., Bendjoudi, D., Guezoul, O. (2022b): New observations of four waterbird species in Algerian Sahara. African Journal of Ecology 60(3): 516–522.

Chedad, A., Adamou, N., Bouzid, A., Bendjoudi, D., Guezoul, O. (2022c): The common starling *Sturnus vulgaris L.*, 1758 regular wintering species in the Algerian Sahara. Natural Resources and Sustainable Development 12(1): 189–197.

Chedad, A., Bouzid, A., Bendjoudi, D., Guezoul, O. (2023a): Avifauna of M'Zab region (Ghardaïa, Algerian Sahara): Checklist and overview of the current status. Zoology and Ecology 33(1): 22–35.

Chedad, A., Horo, A., Bouzid, A., Bendjoudi, k, Guezoul, O. (2023b): Palm grove, an important refuge for avian species in the Algerian Sahara. Revue Des BioRessources 13(2): 148–164.

Chedad, A., Bouzid, A., Ben Abderrahman, A., Dahmani, W., AitHammou, M., Amine Bouzidi, M., Mezzi, M., Bendjedidi, A., Hadj Mhammed, T. (2023c): First record of Grey plover *Pluvialis squatarola* in the sahara and an

update on its distribution in Algeria. Community and Ecology 1(1): 2–6.

Chedad, A., Bouzid, A., Samraoui, F., Samraoui, B. (2023d): Surviving amid the Saharan sands: First breeding record and nesting ecology of the Mallard in the Algerian Sahara. Wetlands Ecology and Management 31(6): 1–13.

Cooperrider, A.Y., Kim, K.C., Weaver, R.D. (1996): Biodiversity and landscapes: a paradox of humanity. The Journal of Wildlife Management 60(3): 689.

Djemadi, I., Draidi, K., Bouslama, Z. (2018): First record of Rustic Bunting for Algeria. Bulletin of the African Bird Club 25(2): 211–212.

El Bouhissi, M., Babali, B., Sadine, S., Chedad, A. (2021): New locality of House Bunting *Emberiza sahari* from North-West Algeria. Alauda 89(4): 301–302.

Farhi, Y., Belhamra, M. (2012): Typologie et structure de l'avifaune des Ziban (Biskra, Algérie). Université Mohamed Khider – Biskra, Algérie 13: 127–136.

Farhi, Y., Aouissi, H.A., Merdas, S., Fadlaoui, H., Merzouki, Y. (2022): First breeding data of the barn swallow (*Hirundo rustica*) in the northern Algerian Sahara (Biskra region). African Journal of Ecology 60(4): 1283–1286.

Guezoul, O., Chenchouni, H., Sekour, M., Ababsa, L., Souttou, K., Doumandji, S. (2013): An avifaunal survey of mesic manmade ecosystems "Oases" in Algerian hot-hyper arid lands. Saudi Journal of Biological Sciences 20(1): 37–43.

Isenmann, P., Molai, A. (2000): Oiseaux d'Algérie [Birds of Algeria] (Paris Société d'études Ornithologiques de France). Musé nationale Histoire Nature.

Khezzani, B. (2021): Should We be Concerned About Climate Change? Annals of Arid Zone 60(3-4): 149–150.

Khezzani, B., Khechekhouche, E. A., Zaater, A., Guezzoun, N., Tliba, B., Brahim, A.B., Chouikh, A., Zeghdi, A. (2022): Eucalyptus sp. as biodrainage system in an arid region: A case study from the Souf oasis (south Algeria). Macedonian Journal of Ecology and Environment 24(1): 31–38.

McDermott, M.E., DeGroote, L.W. (2017): Linking phenological events in migratory passerines with a changing climate: 50 years in the Laurel Highlands of Pennsylvania. PLOS ONE 12(4): 1–17.

Moulaï, R. (2019): Expansion du Bruant du Sahara *Emberiza sahari* dans le nord de l'Algérie. Alauda 87(3): 170–171.

Padoa-Schioppa, E., Baietto, M., Massa, R., Bottoni, L. (2006): Bird communities as bioindicators: The focal species concept in agricultural landscapes. Ecological Indicators 6(1): 83–93.

Quezel, P., Santa, S. (1962): Nouvelle flore de l'Algérie et des régions désertiques méridionales. Tome I. Editions du Centre National de la Recherche Scientifique.

Quezel, P., Santa, S. (1963): Nouvelle flore de l'Algérie et ses régions désertiques méridionales. Tome II. Editions du Centre National de la Recherche Scientifique.

Seltzer, P. (1946): Le climat de l'Algérie. Travaux de l'Institut de météorologie et de physique du globe de l'Algérie. Impr. "La Typo-litho" & J. Carbonel.

Svensson, L. (2010): The ornitho guide, the most complete bird guide of Europe, North Africa and the Middle East (French). Delachaux et Niestlé.

Thongsoulin, P., Phanthuamath, V., Islam, M.S., Thongmanivong, S., Kang, Y. (2019): The Relationship between Birds Diversity and Habitats in Phou Khao Khouay (PKK) National Park of Lao PDR. Open Journal of Forestry 9(2): 143–158.